Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
SKYTERRA COMMUNICATIONS, INC.	)	File No. _____
Application for Authority to Construct, Launch and Operate Two Collocated Geostationary Satellites in the Fixed-Satellite Service Using the Ka-Band at the 95° W.L. Orbital Location	)	

APPLICATION

Pursuant to Sections 308, 309 and 319 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 308, 309, 319, Part 25 of the Commission's rules, 47 C.F.R. Part 25, and the Commission's May 19, 2003 *First-Come-First-Served Report and Order ("FCFS Order")*,[1] SkyTerra Communications, Inc. ("SkyTerra") hereby files application for authority to construct, launch and operate two geostationary orbit ("GSO") satellites in the Fixed-Satellite Service ("FSS") using the Ka-band frequencies. SkyTerra requests authority to use these frequency bands at the 95° W.L. orbital slot. In accordance with the *FCFS Order*, this pending application will not cause SkyTerra to exceed the five-satellite limit for licensed-but-unbuilt and pending applications in each of these frequency bands.[2]

Specifically, SkyTerra requests authority to launch and operate two GSO FSS satellites collocated at 95° W.L. that would operate in the portion of the Ka-band designated for primary

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1 *In the Matter of Amendment of the Commission's Space Licensing Rules and Policies*, IB Docket No. 02-34, First Report and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 10760 (2003) ("*FCFS Order*").

2 *See id.* at 10847-48, ¶¶ 230-31.

GSO FSS use[3] — i.e., 18.3-18.8 GHz and 19.7-20.2 GHz from space to earth,[4] 28.35-28.6 GHz and 29.25-30.0 GHz from earth to space.[5]

SkyTerra is an emerging provider of Direct-to-Home ("DTH") services in the multichannel video programming distribution ("MVPD") and broadband access markets. The proposed satellites will support SkyTerra's MVPD offerings and will allow the company to provide various kinds of multichannel video and two-way broadband services, which will help it to compete in the MVPD marketplace.

The instant application satisfies the requirements of first-come-first-served processing under the *FCFS Order*, and SkyTerra requests that it be placed in the appropriate position in the first-come, first-served queue based on its filing date and time.

I. GENERAL DESCRIPTION OF SKYTERRA FSS SATELLITE SYSTEM AND OPERATIONS

The proposed SkyTerra satellite system will consist of two satellites, Miraxs-1 and SkyTerra-2, collocated and operating from the 95° W.L. orbital location. Both satellites will incorporate a multi-beam payload architecture that provides three distinct coverage patterns across the continental United States ("CONUS"), including full CONUS coverage, regional

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3 Section 25.114(a) of the Commission's Rules states that each proposed space station must be submitted on FCC Form 312, but "[i]f an applicant is proposing more than one space station, information common to all space stations may be submitted in a consolidated system proposal." 47 C.F.R. § 25.114(a).

4 *See In the Matter of Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use, IB Docket No. 98-172, Report and Order,* 15 FCC Rcd 13430, 13433-44, ¶¶ 28-29 (2000).

5 *See In the Matter of Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services,* CC Docket No. 92-297, *Third Report and Order*, 12 FCC Rcd 22310, 22326-27, ¶¶ 40-41 (1997).

coverage using multiple contiguous spot beams and market-specific spot beams for targeted service delivery. The proposed space system will utilize the GSO portion of the Ka-band spectrum in each direction, including the 18.3-18.8 GHz and 19.7-20.2 GHz bands from space-to-earth and the 28.35-28.6 GHz and 29.25-30 GHz bands from earth-to-space.

When collocated in orbit, the two satellites' combined payload will consist of 150 active transponders, with 77 of these transponders assigned to SkyTerra-1 and 73 transponders assigned to SkyTerra-2. Each satellite will have one CONUS transponder consisting of four 54 MHz channels using 183 MHz of the assigned Ka-band spectrum in the forward direction only. The two CONUS beams will utilize right- and left-hand ("RHCP/LHCP") circular polarization respectively to provide two overlapping CONUS beams across the service area.

The two satellites' combined payload will also include 32 contiguous regional beams that provide service to specific regional areas throughout the service area in both the forward and return paths. The regional transponders will employ a four-times frequency re-use pattern and dual polarization plan (RHCP/LHCP). In the forward path, the 32 regional forward transponders will use 218 MHz of the assigned Ka-band spectrum, with each transponder consisting of one 54 MHz channel. In the return path, the 32 regional return transponders will utilize 41 MHz of the assigned Ka-band spectrum with each regional return transponder consisting of 42 115 kbps channels.

In addition, each satellite payload will include 21 spot beams used to provide services to high-density population areas throughout the national service area. When collocated in orbit, the two satellites' combined payload will include 42 market-specific spot beams operating in both the forward and return paths. The spot transponders will employ a four-times frequency re-use pattern and dual polarization plan (RHCP/LHCP). In the forward path, the 42 spot forward

transponders will use 291 MHz of the assigned Ka-band spectrum with each Spot Forward transponder consisting of eight 36 MHz channels. In the return path, the 42 spot return transponders will utilize 82 MHz of the assigned Ka-band spectrum with each spot return transponder consisting of thirty-one 115 Kbps channels.

Schedule S hereto contains a detailed description of the technical specifications of the proposed satellite system at the 95° W.L. orbital location and is incorporated into this narrative by reference.

II. SERVICES TO BE PROVIDED

SkyTerra plans to offer the following services to customers using the satellite system proposed in this application:

- Direct-to-home video and audio services, including extensive local-into-local services, high definition programming, on-demand entertainment, digital music, and interactive media.

- Two-way narrowband and broadband services, including interactive television and high-speed Internet access. This will allow SkyTerra compete more effectively with its primary competitors (DBS and cable operators), which increasingly bundle their traditional multichannel video services with interactive offerings and high-speed Internet access.

- Transport of programming to SkyTerra uplink centers and remote gateways.

III. FINANACIAL QUALIFICATIONS; COST OF CONSTRUCTION, LAUNCH AND OPERATION

The *FCFS Order* abolished the requirement of submitting an estimate of the proposed system's cost, as well as the financial qualification requirements.[6] Nonetheless, SkyTerra is amply qualified to finance the construction, launch and operation of the proposed satellites.

[6] *FCFS Order*, 18 FCC Rcd at 10824, ¶ 164, App. B §§ 6 and 13 (deleting Sections 25.114(c)(13), 25.140(b)(3)-(4) and 25.140(c)-(d) of the Commission's Rules).

IV. LEGAL QUALIFIACTIONS

SkyTerra's legal qualifications are set forth in the Form 312 submitted today with this application.

V. MILESTONES

SkyTerra will submit itself to the milestones contemplated by the Commission's new rules for satellite licensees as set forth in the *FCFS Order*.[7]

VI. PUBLIC INTEREST CONSIDERATIONS

The grant of this application clearly serves the public interest by allowing the provision of competitive direct-to-home services (including local-into-local and high definition channels), two-way broadband, and interactive television services to consumers located throughout the continental United States. Granting of this application will have a three-fold public benefit:

First, it will provide consumers with "greater choice" in their selection of entertainment and information services. By using the proposed satellites to deliver a competitive multichannel video offering, SkyTerra can provide these consumers with an alternative to incumbent DBS and cable offerings.

Second, the grant of this application will provide SkyTerra with the necessary capacity to effectively compete with established DBS and cable operators and to provide consumers with a comprehensive service offering that is competitive in both price and service.

Third, the proposed system will enable SkyTerra to expand the number of markets where local-into-local is currently offered via satellite and to support local broadcasters across the country as they transition to digital operations.

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[7] *See id.* at 10827-88, ¶ 174 (contract execution within one year; critical design review within two years; commence construction within three years; and launch and operate within five years).

VII. THE APPLICATION SATISFIES THE REQUIREMENTS FOR FCFS PROCESSING

The Commission's *FCFS Order* explicitly provides that the Commission will consider applications under FCFS processing so long as the ITU has adopted a frequency allocation for the proposed service, even if the Commission has not yet adopted a domestic allocation.[8] This application submitted by SkyTerra satisfies this requirement because all of the frequency bands being requested in the proposed application have primary FSS allocations, both domestically and internationally.

VIII. WAIVER REQUESTS

SkyTerra hereby requests all necessary waivers of Section 25.202(g) of the Commission's Rules in order to allow it to operate using the 3.6314-3.6350 GHz and 5.8565-5.860 GHz frequency bands, which are outside of its authorized Ka-band frequencies, to perform telemetry, tracking and control ("TT&C") functions for launch and transfer orbit operations. There is good cause for this requested waiver.

First, SkyTerra is requesting the use of these frequencies on a "one time only" interim basis to support mission-critical launch and transfer orbit operations. Upon successful launch and completion of transfer orbit operations, SkyTerra will use its authorized Ka-band frequencies to perform in-flight TT&C functions and cease to use the requested frequencies.

Second, due to the limited availability of Ka-band TT&C facilities in the world and the critical importance of the deployment stage, the use of these flight-proven frequencies for launch and transfer orbit operations will help SkyTerra to further reduce risk to the program and to help ensure a successful launch and transfer orbit operations.

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[8] *Id.* at 10809, ¶ 124 ("We will … consider applications filed after the ITU adopts an international frequency allocation but before the Commission adopts a domestic allocation.")

IX. COMPLIANCE WITH COMMISSION RULES

The proposed satellites are compatible with two-degree spacing rules in all non-allocated bands and will not cause harmful interference to any authorized user of the spectrum. They also comply with all technical and non-technical requirements of Part 25 of the Rules as amended by the *FCFS Order*. Specifically, SkyTerra will comply with all applicable power flux density limits[9] and with the Commission's full frequency reuse requirements.[10] Except where any waivers have been requested, SkyTerra commits to comply with the Commission's Rules for GSO FSS satellites operating in the Ka-bands.[11]

X. ORBITAL DEBRIS MITIGATION

Pursuant to Section 2.217(d) of the Commission's Rules,[12] applicants requesting a satellite authorization must submit a narrative statement describing the debris mitigation design and operational strategies, if any, that they will use.

To control orbital debris, SkyTerra will use a design for its satellites and launch vehicles that minimizes the amount of debris released during normal operations. To ensure that the SkyTerra satellites do not become a source of orbital debris, SkyTerra will conduct an analysis to ensure that the probability of collision with any known space-borne objects during its normal operational lifetime is minimal. SkyTerra will also conduct an analysis which demonstrates that no realistic failure modes exist or can lead to an accidental explosion during normal operations or before completion of post operations disposal. At the end of the operational life of each satellite, SkyTerra will maneuver its spacecraft to a storage orbit with a perigee altitude above its

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9 *See* 47 C.F.R. §§ 25.208(c)-(d) (GSO FSS downlink Ka-band frequencies).

10 *See* 47 C.F.R §§ 25.210(g).

11 *See* 47 C.F.R § 25.145.

12 47 C.F.R. § 2.217(d).

normal operational orbit. SkyTerra will use a maneuver strategy that reduces the risk of leaving any of its spacecraft near an operational orbit regime. After each spacecraft has reached its final disposal orbit, all on-board sources of stored energy will be depleted or safely secured.

XI. ITU COST RECOVERY

SkyTerra is aware that as a result of the actions taken at the 1998 Plenipotentiary Conference, as modified by the ITU Council in June 2001, processing fees will now be charged by the ITU for satellite network filings. As a consequence, Commission applicants are responsible for any and all fees charged by the ITU. SkyTerra is aware of and unconditionally accepts this requirement and its responsibility to pay any ITU cost recovery fees for the ITU filings associated with this application. Invoices for such fees may be sent to the contact representative listed the accompanying Form 312.

XII. CONCLUSION

For the foregoing reasons, SkyTerra respectfully requests that the Commission promptly approve this application as in the public interest, convenience and necessity.

Respectfully submitted,

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